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| 10/518,841 | 12/21/2004 | Matthew P.J. Baker | GB 020133 | 1273 |

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EXAMINER

APPIAH, CHARLES NANA

ART UNIT PAPER NUMBER

2617

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/518,841

Applicant(s)

BAKER ET AL.

Examiner

Charles N. Appiah

Art Unit

2617

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 10-18 is/are rejected.
- 7) ☒ Claim(s) 6-9 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 6-9 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from another multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 6-9 have not been further treated on the merits.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-4, 10-13, 17/12 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Hunte (WO 00/76233).

Regarding claims 1, 2, 10 and 18 Hunte discloses a communication system a primary station, a secondary station and a method for operating a communication system (see Fig. 1) having a downlink data channel for the transmission of data packets from a primary station (BSC, PCU, BTS) to a secondary station (MS) and uplink and uplink control channels (see page 10, lines 1-17), wherein the secondary station has means for measuring at least one characteristic of the data channel (measurements being taken in the terminal MS in respect of downlink RDL, page 10, 27-30), and for transmitting of reports relating to one or more of the measured channel characteristics

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to the primary station on the uplink control channel (results of measurements are sent in the form of measurement data reports, i.e., from the terminal MS to the packet control node, see page 10, line 30 to page 11, line 3, Figs, 2A-2B), wherein the primary station has time signaling means for instructing the secondary station via the downlink control channel of the length of time during which channel measurements used to generate each report should be made (choosing of length of the interval at which measurement reports are polled, see page 12, lines 6-9, page 13, lines 18-24), and wherein the primary station has means for determining at least one operational parameter of the data channel depending on the reports (packet control unit evaluating the quality of the connection with the aid of the measurement report to choose coding procedures that are suitable for maintaining a desired quality of the radio downlink connection, see page 11, lines 5-21).

Regarding claim 3, Hunte's teaching of the packet control unit providing a radio block with a measurement report request, which is sent downlink and received by a mobile terminal wherein the mobile terminal creates a measurement report to send uplink (see page 12, lines 11-30) meets the signaling means signals the number of measurements to be made to generate each report.

Regarding claim 4, Hunte further discloses that the time signaling means signals the interval between each of the measurements to be made to generate each report (see given predetermined duration of the interval IL, col. 13, lines 2-6).

Regarding claims 11 and 12, Hunte further discloses means for receiving via the downlink control channel instructions of the length of time during which channel

measurements are made and means for determining the length of time during which the channel measurements are made (duration of the interval IL chosen on the basis of evaluation of variation in transmission quality, see page 13, lines 18-25).

Regarding claim 13, Hunte further discloses in that the measured characteristic is one of bit error rate, signal to noise ratio, signal to interference ratio (see page 10, lines 25-29).

Regarding claim 17/12, Hunte further discloses in that the length of time during which channel measurements are made is varied depending on at least one of soft handover state, the active set size and the downlink packet activity level (see page 6, lines 5-27).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunte as applied to claim 5 above, and further in view of Suzuki (6,208,861).

Regarding claim 5, Hunte fails to explicitly teach that means are provided for determining the speed of the secondary station and in that the time signaling means is responsive to the determined speed to vary the signaled length of time.

Suzuki discloses a communication control method, which can optimize channel monitoring by using intermittent period of time during which the channel condition is

monitored, which is changed according to the movement velocity of a mobile terminal (see col. 2, lines 19-52, col. 3, lines 41-61 and col. 4, lines 31-56).

It would therefore have been obvious to one of ordinary skill in the art to use the adaptive monitoring system of Suzuki in order to ensure improved communication quality regardless of the movement velocity of a mobile terminal as taught by Suzuki.

6. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunte as applied to claims 10-12 above, and further in view of Medvedev et al. (6,862,271).

Regarding claim 14, Hunte further the primary station inherently comprising a plurality of antennas (it is inherent that the base station comprises a plurality of antennas) but fails to teach wherein the secondary station also comprise a plurality of antennas and that the reports relate to a plurality of combinations of paths between antennas.

In an analogous filed of endeavor, Medvedev discloses a multiple-input, multiple-output (MIMO) multi-channel communication system that achieves high spectral efficiency in transmitting data by employing multiple transmission schemes including beam-forming to provide improved performance over a wider range of SNRs (see col. 13, line 56 to col. 14, line 9). According to Medvedev and as illustrated in Fig. 3, the transmitter and receiver system comprise a plurality of antennas and wherein the receiver is capable of processing SNRs for the transmission channels (see col. 21, lines 9-61).

It would therefore have been obvious to one of ordinary skill in the art to incorporate Medvedev's MIMO system into Hunte's measurement system in order to select a transmission scheme that yields the highest spectral efficiency.

7. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hunte as applied to claims 2 and 10-12 above, and further in view of Zimmerman et al. (6,75,547).

Regarding claim 16, Hunte fails to explicitly disclose that means are provided for setting a timer on receipt of data packet and for altering the length of time during which channel measurements are made while the timer is running.

In an analogous field of endeavor, Zimmerman discloses a method for measuring the transmission quality between a base station and at least one remote station in a communication network (see col. 2, lines 44-64), and wherein measurements of transmission quality are sampled over different time periods inherently reading on a timer (see col. 5, lines 24-55) and the different periods can be defined and thus altered (see col. 8, lines 13-65).

It would therefore have been obvious to one of ordinary skill in the art to combine Zimmerman's quality measurement system by incorporating timing means into the Hunte's measurement system in order to enhance quality communications using a reduced number of measurements as taught by Zimmerman.

8. Claim 15 and 17/15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hunte (WO 00/76233).

Regarding claim 15, Hunte teaches the sending of a measurement report using an uplink channel to the packet control unit (see page 12, lines 19-32), but fails to explicitly teach wherein means are provided for signaling to the primary station on the uplink control channel the length of time for which channel measurements were made. However, since Hunte discloses the channel measurement report being sent uplink by the mobile terminal, it would have been obvious to one of ordinary skill in the art to include the time for making the channel measurement in the report in order to properly provide an additional parameter in making channel quality decisions.

Regarding claim 17/15, Hunte further discloses in that the length of time during which channel measurements are made is varied depending on at least one of soft handover state, the active set size and the downlink packet activity level (see page 6, lines 5-27).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Suzuki (GB 2 305 825) discloses a mobile telephone measuring channel conditions at time intervals depending on velocity.

Voyer (6,961,542) discloses a method for estimating a downlink channel between a base station and a mobile terminal.

Wei et al. (US 2003/0204615) discloses a method for using channel quality feedback for dynamically adjusting parameters of a transmission system.

Nilsson (6,907,257) discloses a radio transceiver for estimating SIR for use in power control .

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles N. Appiah whose telephone number is 571 272-7904. The examiner can normally be reached on M-F 7:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on 571-272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

CA


CHARLES APPIAH
PRIMARY EXAMINER